

AMENDMENTS TO THE CLAIMS

Claims Pending:

- At time of the Action: Claims 1-3, 5-11, 13, 14, and 16-38
- Allowed Claims: Claims 1-3 and 5-7
- Cancelled Claims: Claims 8-11, 13-14, and 16-38
- Previously Cancelled: Claims 4, 12, and 15
- After this Response: Claims 1-3 and 5-7

The following listing of claims replaces all prior versions and listings of claims in the application.

1. **(Previously Presented)** A method, comprising:

receiving a request to add a new filter to a filter table stored in an inverse query engine cache;

adding the new filter to the filter table, wherein the new filter comprises a condition field, a data field, an expiration field, a filter weight field, and a permanent flag field, the permanent flag field being a Boolean field indicating that the new filter is not to be removed from the filter table during an expire cache operation or a trim cache operation;

assigning a weight value in the filter weight field to the new filter based on an estimate of a size of the new filter, wherein the weight value denotes the relative size of the new filter in relation to other filters stored in the filter table of the inverse query engine;

determining the filter table of a bounded size;

maintaining the inverse query engine cache at or below a maximum cache size, wherein the size of the inverse query engine cache may be indicated by size of the filter table, estimate of size of the filter table, or by cache usage;

wherein the inverse query engine cache comprises a control module, a cache, an add filter module, a remove filter module, a matcher, a maintainer, an expire module, a trim module, a cache weight module, a cache weight, an optimal weight, a maximum weight, a filter table, a most recently used list, and an expiration list;

wherein the expiration list comprises a filter identifier including an expiration value in the expiration field;

removing a filter based on an expiration time;

checking the expiration value in the expiration field of a filter against a current time, in response to the expiration value is earlier than the current time, remove the filter;

checking the specified period of time, removing a filter that has been stored in the filter table longer than a specified period of time;

trimming the filter table upon the occurrence of the filter table reaching the maximum weight, by determining the cache weight and identifying filters to be removed and removing filters from the filter table to obtain the optimal weight; and

wherein determining when a permanent flag in a filter is set, leave the filter in the filter table;

wherein the inverse query engine cache is used exclusively by an inverse query engine to store filters associated therewith.

2. (Original) The method as recited in claim 1, further comprising maintaining the size of the inverse query engine cache between an optimal cache size and the maximum cache size.

3. (Previously Presented) The method as recited in claim 1, wherein the maintaining further comprises:

determining if the addition of the new filter to the filter table increases the cache size above the maximum cache size; and

removing one or more filters from the filter table if the addition of the new filter causes the cache size to exceed the maximum cache size.

4. (Cancelled)

5. (Original) The method as recited in claim 1, wherein the maintaining further comprises:

identifying a weight associated with the new filter;

adding the weight associated with the new filter to a cache weight that is the sum of filter weights of filters in the filter table, each filter having a filter weight; and

comparing the cache weight to the maximum cache size.

6. (Original) The method as recited in claim 1, further comprising identifying one or more expired filters in the filter table; and wherein the maintaining the inverse query engine cache further comprises removing at least one of the identified expired filters.

7. (Original) The method as recited in claim 1, further comprising a least recently used filter in the filter table; and wherein the maintaining the inverse query engine cache further comprises removing the least recently used filter from the filter table when a size of the inverse query engine cache reaches the maximum cache size.

8-11. (Cancelled).

12. (Previously Cancelled).

13.-14.(Cancelled).

15. (Previously Cancelled).

16-38. (Cancelled).